

## AMENDMENTS TO THE CLAIMS

This listing replaces all prior versions and listings of claims in the application.

### Listing of Claims

1. (Cancelled)
2. (Original) An antibody binding to 40-kDa OMP or a functional fragment thereof, which has (1) activity of inhibiting the coaggregation of *P. gingivalis* and (2) activity of promoting human neutrophilic phagocytosis.
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 2, 3, and 5~~ claim 2, wherein the coaggregation of *P. gingivalis* is coaggregation of *P. gingivalis* and *Actinomyces viscosus*.
7. (Original) An antibody binding to 40-KDa OMP or a functional fragment thereof, which has activity of suppressing alveolar bone resorption.
8. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 1 to 7~~ claim 2, wherein the antibody is a human antibody.
9. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 1 to 8~~ claim 2, which is produced by a mouse-mouse hybridoma.
10. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 1 to 9~~ claim 2, wherein the antibody is a monoclonal antibody.
11. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 1 to 10~~ claim 2, which covalently or non-covalently binds to a therapeutic agent.
12. (Original) The antibody or the functional fragment thereof according to claim 11, wherein the therapeutic agent is selected from antibiotics or antibacterial agents.

13. (Original) The antibody or the functional fragment thereof according to claim 12, wherein the antibiotic or the antibacterial agent is tetracycline or minocycline.

14. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 1 to 13~~ claim 2, wherein the antibody class is IgG.

15. (Original) The antibody or the functional fragment thereof according to claim 14, wherein IgG is IgG1.

16. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 1 to 13~~ claim 2, wherein the antibody class is IgA.

17. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 1 to 16~~ claim 2, wherein the amino acid sequence of a heavy chain constant region is altered.

18. (Original) An antibody binding to 40-kDa OMP or a functional fragment thereof, which is produced by a hybridoma h13-17 (accession No. FERM BP-8325).

19. (Original) An antibody binding to 40-kDa OMP or a functional fragment thereof, which comprises variable regions of an antibody that is produced by a hybridoma h13-17 (accession No. FERM BP-8325).

20. (Original) The antibody or the functional fragment thereof according to claim 18 or 19, which covalently or non-covalently binds to a therapeutic agent.

21. (Original) The antibody or the functional fragment thereof according to claim 20, wherein the therapeutic agent is selected from antibiotics or antibacterial agents.

22. (Original) The antibody or the functional fragment thereof according to claim 21, wherein the antibiotic or the antibacterial agent is tetracycline or minocycline.

23. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 18 to 22~~ claim 18 or 19, wherein the antibody class is IgG.

24. (Original) The antibody or the functional fragment thereof according to claim 23, wherein IgG is IgG1.

25. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 18 to 22~~ claim 18 or 19, wherein the antibody class is IgA.

26. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 18 to 25~~ claim 18 or 19, wherein the amino acid sequence of a heavy chain constant region is altered.

27. (Original) A hybridoma h13-17 (accession No. FERM BP-8325).

28. (Original) An antibody binding to 40-kDa OMP or a functional fragment thereof, which is produced by a hybridoma 5-89-2 (accession No. FERM BP-8323).

29. (Original) An antibody binding to 40-kDa OMP or a functional fragment thereof, which comprises variable regions of an antibody that is produced by a hybridoma 5-89-2 (accession No. FERM BP-8323).

30. (Original) The antibody or the functional fragment thereof according to claim 28 or 29, which covalently or non-covalently binds to a therapeutic agent.

31. (Original) The antibody or the functional fragment thereof according to claim 30, wherein the therapeutic agent is selected from antibiotics or antibacterial agents.

32. (Original) The antibody or the functional fragment thereof according to claim 31, wherein the antibiotic or the antibacterial agent is tetracycline or minocycline.

33. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 28 to 32~~ claim 28 or 29, wherein the antibody class is IgG.

34. (Original) The antibody or the functional fragment thereof according to claim 33, wherein IgG is IgG1.

35. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 28 to 32~~ claim 28 or 29, wherein the antibody class is IgA.

36. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 28 to 35~~ claim 28 or 29, wherein the amino acid sequence of a heavy chain constant region is altered.

37. (Original) A hybridoma 5-89-2 (accession No. FERM BP-8323).

38. (Original) An antibody binding to 40-kDa OMP or a functional fragment thereof, which is produced by a hybridoma a44-1 (accession No. FERM BP-8324).

39. (Original) An antibody binding to 40-kDa OMP or a functional fragment thereof, which comprises variable regions of an antibody that is produced by a hybridoma a44-1 (accession No. FERM BP-8324);

40. (Currently Amended) The antibody or the functional fragment thereof according to ~~claim 40 or 41~~ claim 38 or 39, which covalently or non-covalently binds to a therapeutic agent.

41. (Original) The antibody or the functional fragment thereof according to claim 40, wherein the therapeutic agent is antibiotics or antibacterial agents.

42. (Original) The antibody or the functional fragment thereof according to claim 41, wherein the antibiotic or the antibacterial agent is tetracycline or minocycline.

43. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 38 to 42~~ claim 38 or 39, wherein the antibody class is IgG.

44. (Original) The antibody or the functional fragment thereof according to claim 43, wherein IgG is IgG1.

45. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 38 to 42~~ claim 38 or 39, wherein the antibody class is IgA.

46. (Currently Amended) The antibody or the functional fragment thereof according to ~~any one of claims 38 to 45~~ claim 38 or 39, wherein the amino acid sequence of a heavy chain constant region is altered.

47. (Original) A hybridoma a44-1 (accession No. FERM BP-8324).

48. (Cancelled)

49. (Original) A protein encoded by the nucleic acid according to claim 48, which is an antibody or a functional fragment thereof.

50. (Cancelled)

51. (Cancelled)

52. (Cancelled)

53. (Cancelled)

54. (Original) An agent for suppressing alveolar bone resorption, which contains an antibody binding to 40-KDa OMP or a functional fragment thereof as an active ingredient.

55. (Original) An agent for preventing, diagnosing, or treating periodontal diseases, which contains an antibody binding to 40-kDa OMP or a functional fragment thereof as an active ingredient.

56. (Cancelled)

57. (Cancelled)

58. (Cancelled)

59. (Cancelled)

60. (Currently Amended) An agent for preventing, diagnosing, or treating periodontal diseases, which contains the antibody or the functional fragment thereof according to any one of claims ~~1 to 26, 28 to 36, 38 to 46, and 49~~ 2 and 6-17 as an active ingredient.

61. (Currently Amended) An agent for suppressing alveolar bone resorption, which contains the antibody or the functional fragment thereof according to any one of claims ~~1 to 26, 28 to 36, 38 to 46, and 49~~ 2 and 6-17 as an active ingredient.

62. (Cancelled)

63. (Cancelled)

64. (Cancelled)

65. (Cancelled)

66. (New) An agent for preventing, diagnosing, or treating periodontal diseases, which contains the antibody or the functional fragment thereof according to any one of claims 18, 19, 28, 29, 38 and 39 as an active ingredient.

67. (New) An agent for suppressing alveolar bone resorption, which contains the antibody or the functional fragment thereof according to any one of claims 18, 19, 28, 29, 38 and 39 as an active ingredient.